

# Claims

[c1] A mammography imaging assembly comprising:

- a gantry frame assembly;
- an imaging signal generation assembly mounted to said imaging frame;
- an imaging detector bucky mounted to said imaging frame assembly, said imaging detector bucky comprising a patient exposure surface facing said imaging signal generation assembly;
- at least one thermo sensor assembly positioned to monitor temperature at said patient exposure surface;
- a thermo generating element in thermal communication with said patient exposure surface;
- a logic in communication with said at least one thermo sensor assembly and said thermo generating element, said logic utilizing information from said at least one thermo sensor to control heat generated by said thermo generating element such that the temperature of said patient exposure side is controlled; and
- a compression paddle movably positioned between said imaging signal generation assembly and said imaging detector bucky.

- [c2] A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprises a thermo electric element positioned within said imaging detector bucky.
- [c3] A mammography imaging assembly as described in claim 1 wherein said logic is in communication with said imaging signal generation assembly, said logic adapted to remove power from said thermo generating element prior to activating said imaging signal generation assembly.
- [c4] A mammography imaging assembly as described in claim 3 wherein said logic is further adapted to:  
lower said compression paddle into thermal communication with said thermo generating element; and  
raising said compression paddle prior to activating said imaging signal generation assembly.
- [c5] A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprises a radiolucent cover surrounding said imaging detector bucky.
- [c6] A mammography imaging assembly as described in claim 1 wherein said thermo generating element comprises a non-radiolucent cover surrounding said imaging

detector bucky; and  
said logic is further adapted to automatically remove  
said non-radiolucent cover prior to activating said imaging  
signal generation assembly.

- [c7] A mammography imaging assembly as described in  
claim 6 wherein said non-radiolucent cover is removed  
in response to said compression paddle moving away  
from said imaging detector bucky.
- [c8] A mammography imaging assembly as described in  
claim 1 wherein said imaging detector bucky comprises  
an upper bucky surface defining an imaging region, said  
at least one thermo sensor assembly positioned outside  
said imaging region.
- [c9] A mammography imaging assembly as described in  
claim 1 wherein said thermo generating element com-  
prise:  
a heater array comprising a conductive polymer coating  
bonded to a film base, wherein said conductive polymer  
coating comprises carbon flakes suspended in a liquid  
polymer.
- [c10] A mammography imaging assembly as described in  
claim 1 wherein said thermo generating element com-  
prise:

a heater array comprising a conductive polymer coating bonded to a film base and a protective film layer laminated to said film base.

- [c11] A mammography imaging assembly comprising:
- an imaging frame assembly;
  - a imaging signal generation assembly mounted to said imaging frame;
  - an imaging detector bucky mounted to said imaging frame assembly, said imaging detector bucky comprising a patient exposure surface facing said imaging signal generation assembly;
  - at least one thermo sensor assembly positioned to monitor temperature at said patient exposure surface;
  - a thermo generating element in thermal communication with said patient exposure surface; and
  - a logic in communication with said at least one thermo sensor assembly and said thermo generating element, said logic utilizing information from said at least one thermo sensor to control heat generated by said thermo generating element such that the temperature of said patient exposure side is controlled, said logic in communication with said imaging signal generation assembly, said logic adapted to remove power from said thermo generating element prior to activating said imaging signal generation assembly.

- [c12] A mammography imaging assembly as described in claim 11 further comprising:  
a compression paddle movably positioned between said imaging signal generation assembly and said imaging detector bucky.
- [c13] A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprises a thermo electric element positioned within said imaging detector bucky.
- [c14] A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprises a radiolucent cover surrounding said imaging detector bucky.
- [c15] A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprises a non-radiolucent cover surrounding said imaging detector bucky; and  
said logic is further adapted to automatically remove said non-radiolucent cover prior to activating said imaging signal generation assembly.
- [c16] A mammography imaging assembly as described in claim 15 wherein said non-radiolucent cover is rotated away from said imaging detector bucky prior to activa-

tion of said imaging signal generation assembly.

[c17] A mammography imaging assembly as described in claim 11 wherein said thermo generating element comprise:

a heater array comprising a conductive polymer coating bonded to a film base, wherein said conductive polymer coating comprises carbon flakes suspended in a liquid polymer.

[c18] A method of maintaining control of the temperature of a patient exposure surface on an imaging bucky detector as a portion of a mammography imaging assembly comprising:

monitoring the temperature of the patient exposure surface using at least one thermo sensor assembly positioned in communication with patient exposure surface; reporting said temperature to a logic; using said logic to control a thermo generating element in response to said temperature such that said temperature can be raised or lowered, said thermo generating element in thermal communication with said patient exposure surface.

[c19] A method as recited in claim 18 further comprising: activating a imaging signal generation assembly using said logic; and

cutting power to said thermo generating element prior to activating said imaging signal generation assembly.

[c20] A method as recited in claim 18 further comprising:  
activating a imaging signal generation assembly using said logic;  
moving a compression paddle into thermal communication with said patient exposure surface prior to use of said imaging signal generation assembly such that thermal energy is transferred from said patient exposure surface to said compression paddle; and  
separating said compression paddle from said patient exposure surface prior to use of said imaging signal generation assembly.